UNION CARBIDE

—Y-12 BULLETIN

A Newspaper For Y-12 Employees of Union Carbide Corporation—Nuclear Division

VOL. 21 — NO. 46 OAK RIDGE, TENNESSEE Wednesday, December 6, 1967

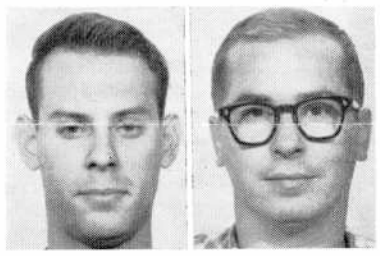
Air Bearing Spindle Developed In Y-12

New System Described In U. S. Reports

Union Carbide machine tool engineers in Y-12 have developed an improved air-bearing spindle for use on both conventional and numerically-controlled turning and boring lathes.

The new spindle system, which uses a special porous graphite, has undergone three years of experimental testing and operational use at the plant. The graphite provides an increase in dynamic stability over other air-bearing spindles, while providing the usual advantages of air-bearing systems — low friction, low heat generation and high rotational accuracy.

Spindle performance tests indicate a rotational accuracy of 12 microinches or less, deflection-load characteristics of less than 1.5 microinches per pound, and a bearing housing temperature rise of less than two degrees Fahrenheit from a cold start to steady-state conditions at a speed of 1,000 rpm.



Abbatiello **Steger**

Although designed for optimum stiffness and thermal stability at a low air supply pressure and normal machining speeds, the design could be altered to produce spindles for other applications.

Y-12 developed the improved system as part of a continual research program to upgrade the quality and efficiency of machine tools used in the plant.

Two technical reports describing the plant's research and operational experience with the spindle are available for purchase through the Clearinghouse for Federal Scientific and Technical Information, National Bureau of Standards, U. S. Department of Commerce, Springfield, Virginia 22151. The reports, costing $3 per copy, are Y-1578, "Air-Bearing Spindle for Production Machine Tools," by P. J. Steger and L. A. Abbatiello; and Y-1581, "Air-Bearing Spindle for Machine Tools — Spherical Design," by Steger.

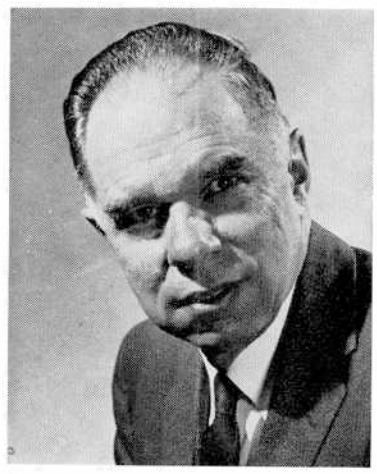
ASME Sets Ladies Night Tomorrow At Deane Hill

The Oak Ridge Subsection of the American Society of Mechanical Engineers will hold its annual Ladies Night Dinner Thursday, December 7, with members of the Knoxville Subsection.

The dinner will be held at Deane Hill Country Club, beginning with a social hour at 6:30 p.m., dinner at 7:15 and the speaker's program at 8 p.m.

M. B. Crotts, Winston-Salem, North Carolina, vice president of the Dixie Region of ASME, will be a special guest.

'Most Exciting, Satisfying Work' -- Glenn Seaborg



Glenn T. Seaborg

On December 2, 1942, Enrico Fermi and his associates first released and controlled the energy in the atom's nucleus. That event launched man into a new world as challenging and as promising as any ever discovered by the early explorers.

We have spent 25 years in that new world, a relatively short span of time. Yet, scientists and engineers have accumulated a vast amount of knowledge and technology on this new source of energy.

We have learned to use it to generate electricity, to propel ships, to study the very nature of matter, and in numerous other ways to serve man.

When we look ahead, this new nuclear world promises an even brighter, richer life for all mankind. We at the Atomic Energy Commission help to plan for this nuclear future and find it a most exciting and satisfying part of our work.

Nuclear energy's future encompasses uses ranging from beneath the seas to far out in space. I believe that before the end of this century nuclear reactors no larger than a compact car will be used to propel spacecraft engines for manned missions to Mars. Life support systems for space travel will be nuclear powered and, someday, nuclear reactors may help man create a habitable environment for a future moon colony.

Nuclear powered deep sea research vessels are already being developed. By the 21st century, man may be harvesting food from the sea, mining its unlimited mineral resources, perhaps even living for extended periods deep beneath the surface. In the future, it will primarily be nuclear energy and its associated technologies that allow man to explore and exploit the ocean.

The major effect of nuclear energy on the world of tomorrow, though, probably will result from a combination of very cheap electricity and process heat which nuclear power can make possible, particularly when we achieve the full development of breeder reactors which make new fuel faster than they use it.

One concept for the future nuclear world which seems to have an almost universal appeal is the possibility of great energy centers, totally new agricultural and industrial complexes based on nuclear power. With a little imagination one can foresee such huge nuclear complexes, highly automated, efficient and clean, as the nuclei of a nation's major industrial areas.

Such centers could be used to uplift an entire region now handicapped by a lack of water, or fuel, or both.

With its compactness and long life, nuclear fuel relieves a country of the need to have natural fuel resources close at hand.

A recent study of the energy center concept foresaw large nuclear powered complexes, which we might call "food factories" on coastal desert areas. Power from nuclear reactors would be used to desalt water for irrigation and industry and make fertilizer and produce electricity for highly mechanized farming and food processing.

For those operating the center, nuclear generated electricity would also supply light, air-conditioning and power for transportation and communication.

The study predicted that in the relatively near future such a "food factory" could be capable of providing one million kilowatts of electricity, desalting 400 million gallons of water a day and producing a grain crop of about 500,000 tons a year, enough to feed 2,500,000 people.

Of course, not all arid areas are on a sea coast. It has been suggested that we use nuclear power with tube-well pumps to tap the vast water resources which lie deep underground in many of the arid areas. Such areas are being identified by United National Hydrological Decade studies.

I would like to make two final points, each vital to our future. Our atmosphere and our natural resources are limited, yet they are being grossly misused. We must learn to preserve the one and reuse the other if we are to continue to thrive on this planet. Nuclear energy is clean and relatively pollution-free. It can make it possible to sort, separate and reprocess used materials from water to iron, for continual reuse — thus creating a virtually junkless society.

We can put nuclear energy to use in limitless ways to make our lives better. Wherever electricity and heat will improve life, nuclear energy and its many forms can make a vital contribution. If our technological progress can be accompanied by a "human breakthrough" in international cooperation and understanding, we shall truly have entered a new world.

SAFETY SCOREBOARD

The Y-12 Plant Has Operated
66 Days Or
1,970,000 Man-Hours
(Unofficial Estimate)
Through December 3
Without a Disabling Injury
Safety At Home At Work, At Play

'Strategically Implanted In Another Phase' Sapirie

S. R. Sapirie

Shortly after the birth of the nuclear age was heralded under the stands of Stagg Field at the University of Chicago 25 years ago, an unknown valley—'Site X' —in the State of Tennessee assumed a major role in the atomic energy program.

On that day, December 2, 1942, in Chicago, man first initiated a self-sustaining nuclear reaction and controlled it. At "Site X" work quickly moved forward on construction of the Graphite Reactor and the major problem of separating enough enriched uranium to meet wartime needs. Today, "Site X" is the thriving young city of Oak Ridge rather than a secret wartime center. But while the Manhattan Engineer District has gone, the Atomic Energy Commission has taken its place as a major part of the community.

"Oak Ridge today," says S. R. Sapirie, manager of the Atomic Energy Commission's Oak Ridge Operations, "finds itself strategically implanted in another important phase of the nuclear energy program."

New Phase In '60s

"If nuclear power in the 1940's was characterized by the development of the atomic bomb, then it can be said that the era of the 1960's has become the decade of development of nuclear power reactors for the production of economically competitive electricity," he adds.

The continuing announcements of plans for new nuclear power plants which have prompted the AEC three times since 1962 to revise its forecast for nuclear power in this country upward, have continued through 1967, as the young field of atomic energy completes it first quarter century.

To Oak Ridge, which is responsible for production of the enriched uranium necessary to fuel the majority of these power reactors, this growth means a tremendous increase in orders for enriched uranium from the private power companies.

Power Needs Double

Forecasts show that electrical power consumption in this country doubles about every 10 years, so that by 1980 the total will be in excess of 500 million kilowatts. The AEC estimates that nuclear generating capacity at that time will be in the neighborhood of 120,000,000 to 170,000,000 kilowatts electrical or roughly 150,000,000 kilowatts for planning purposes.

Just this past May, Sapirie announced that 433,395 pounds of enriched uranium, valued at more than $24,000,000 were ordered. Oak Ridge Operations, through its gaseous diffusion plants in Oak Ridge, Portsmouth, Ohio; and Paducah, Kentucky, is expected to be able to meet all demands for enriched uranium through the near future — probably until around 1980.

According to Sapirie, "This year has again brought increasing orders for nuclear steam supply systems by U. S. electric utilities. By the end of the third quarter of 1967, orders for these systems for the generation of electricity stood at one-and-one-quarter times the nuclear electric generating capacity ordered during all of 1966."

This year's pattern also repeated a trend of last year, with nuclear capacity representing more than half of all generating capacity ordered.

Continued on Page 4

IT ALL STARTED HERE . . . 25 YEARS AGO, when "tomorrow became today" and man took his first step into the atomic age. Looking southeast from 56th and Ellis Avenues, the view above is of the West End of Stagg Field, University of Chicago. Under these stands was the location of CP-1, the world's first atomic pile. On December 2, 1942, man initiated a self-sustaining nuclear chain reaction and controlled it.

The Bulletin

Published Weekly For The
Y-12 Employees Of
UNION CARBIDE
CORPORATION

UNION CARBIDE
NUCLEAR DIVISION

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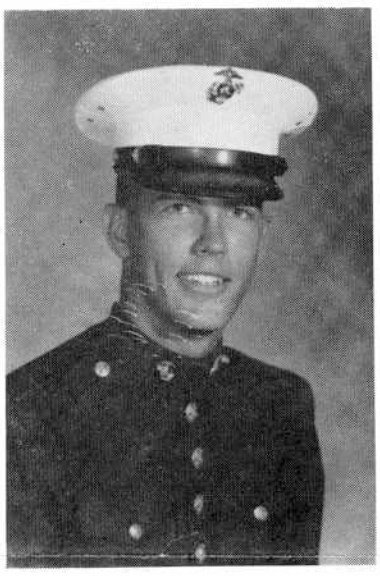
John Lay Son In Marine Corps



Pvt. John W. Lay

John W. Lay, who graduated from Oak Ridge High School this past Spring, has recently returned to the Quantico Marine Base for further assignment to Memphis.

He completed his basic training at Parris Island, South Carolina, and took advanced infantry training at Camp Le Juene, North Carolina.

From Memphis Lay will probably be sent to Viet Nam.

Pvt. Lay, or Burr as his family calls him, is the son of John Lay Jr., Specifications and Systems. John lives at 117 South Purdue Avenue, Oak Ridge.

Ride wanted from Butler Road, Oak Ridge, to Biology Portal, straight day. Helen Zang, plant phone 3-7667.

Ride wanted from 408 East Tennessee Road, Oak Ridge, to North Portal, straight day. Harold Potter, home phone Oak Ridge 482-3306.

Ride wanted from vicinity of Johnson Road, West Outer Drive, Oak Ridge, to North or Central Portal, straight day. Mary Guy, plant phone 3-7308, home phone Oak Ridge 483-3039.

Ride wanted from intersection of Norris Freeway, Highway 61, to Biology Portal, straight day. B. B. Grantham, plant phone 3-7266, home phone Norris 7144.

Car pool member wanted from Norwood Area, Knoxville, to Central or North Portal, straight day. Eugene Keith, plant phone 3-5606, home phone Knoxville 689-2229.

Holiday Bureau Plans Renewed Activities

Workers Needed At Bureau Immediately

Union Carbide employees have always been responsive to the Holiday Bureau, and it is expected that this year will prove no exception. As Christmas approaches, the Holiday Bureau renews its efforts to make the holiday season a little more pleasant for the less fortunate families in Oak Ridge and Anderson County.

This year the Bureau will provide food, toys and clothing to some 900 families with 4,000 children .These families are referred to the Bureau by welfare departments in Oak Ridge and Clinton. The Holiday Bureau is a nonprofit organization governed by a board of directors.

It also acts as a clearing house for groups or individuals who wish to assist a needy family personally. Through a master list, the Bureau is able to supply names as well as other pertinent information.

This service prevents widespread duplication, thereby affording a broader distribution to those in need, Gerald Goldberg, chairman of the bureau, stated recently. Gerry is in ORNL's Analytical Chemistry Division, and has long been active with the local Holiday Bureau.

Located In Dennison Hall

The Holiday Bureau, open from noon until 9 p.m. each day, is located in Dennison Hall, a converted dormitory just east of the National Guard Armory, across the Turnpike from the Garden Apartments. New and repairable toys are needed as well as clothing, non-perishable food and usable furniture.

Above all, the Bureau needs financial assistance. In 1966 it spent $5,300, of which $2,100 was received from the United Fund. The balance came from donations, from interested groups and individuals, coffee funds, and "In-lieu-of-Christmas Cards" contributions.

Must Raise $3,200

This year, Goldberg once again anticipates a budget of $5,300. Therefore, the Bureau must raise $3,200 over and above its United Fund donation.

Through the cooperation of the Oak Ridger, all donations are listed periodically, unless requested otherwise, during the month of December, as are the donations to the "Card Fund."

Donations to both funds may be turned over to Goldberg or mailed to P. O. 220, Oak Ridge, in the name of either of the funds.

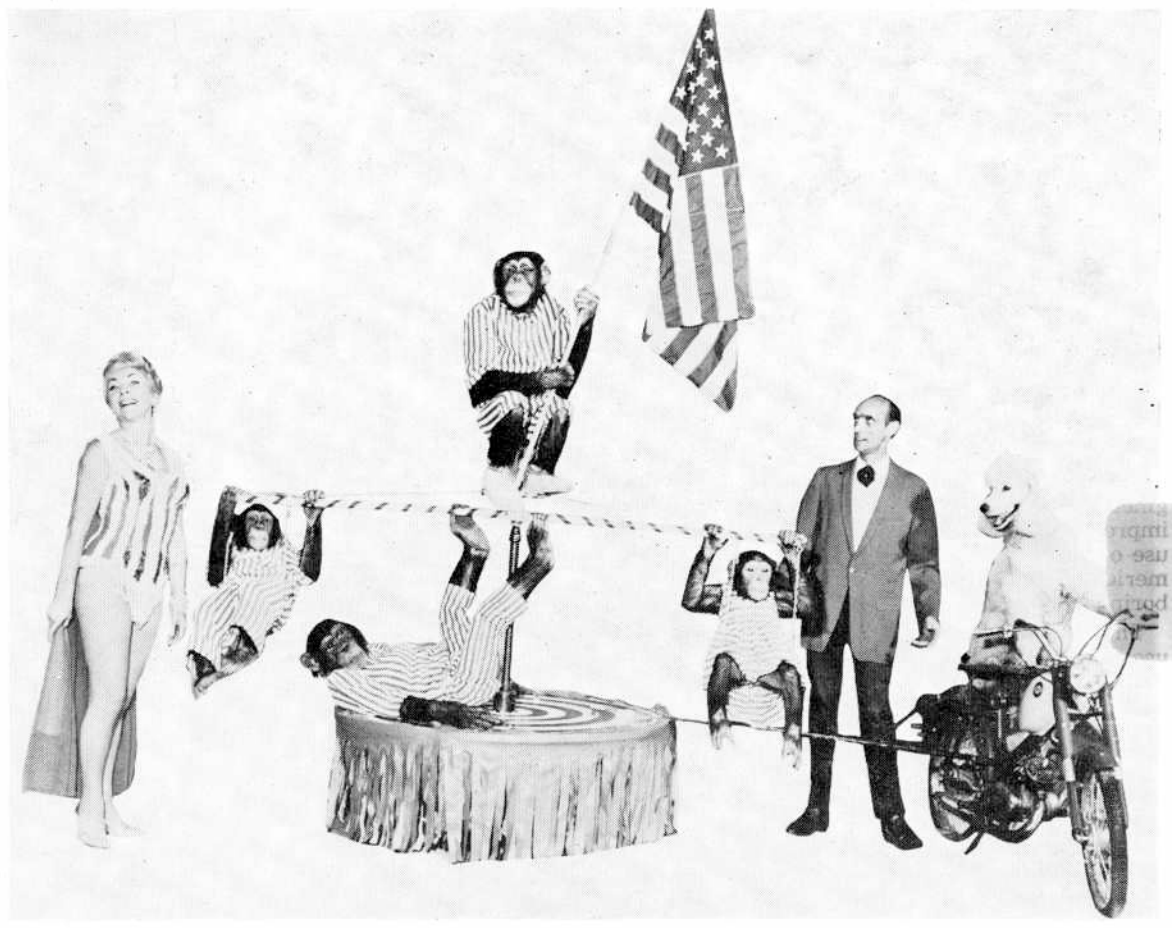
Card Fund donations may be made to the charity of your choice and will be forwarded by the Holiday Bureau. The amount of donation through the Card Fund is not normally listed.

Manpower Needed

In addition to financial support, manpower and womanpower are also needed. Anyone willing to give a few hours time to painting, mending, or sorting and boxing toys will be welcomed. Charlie Stanton, retired Oak Ridge Gaseous Diffusion Plant employee, is at the Bureau at all times.

The telephone number there is 483-0865. Referral of families is handled by Madge Baker. She may be reached at 483-7541. Goldberg may be reached at extension 3-1528, or Oak Ridge telephone 483-9582.

The distribution of toys will begin December 15, so time is growing short. Your own Christmas will be made brighter by lending the Holiday Bureau a helping hand. The knowledge that Christmas was made a little brighter for someone else is a joy in itself.



TRAINED CHIMPANZES, POODLES, and expert trainers will be on tap for the delight of Carbide Kids for the big Christmas parties, set Thursday, December 21. The 9 and 11 a.m., 1, 3, and 5 p.m. parties will be staged for children between one and 10 on that day. Application for tickets appears again in this issue of the Bulletin.

The merry days of December spin on toward their ultimate destination . . . as the happy hearts of children begin to count the hours. Marking important milestones with Union Carbide Corporation are several Y-12ers. Congratulations.

20 YEARS

Glen R. Walls, General Expediting and Auxiliary Services, December 10.

15 YEARS

William F. Mars, Beta Four Forming, December 6.

Henry T. Greene Jr., Beta Two Forming, December 8.

David G. Porter, Electrical Department, December 8.

Robert D. Shank, Process Maintenance, December 10.

Clyde H. Wade, Buildings, Grounds and Maintenance Shops, December 11.

David E. Bailey, Fire Department, December 12.

10 YEARS

Frederick H. Frank, General Machine Shop, December 9.

James W. Gorenflo, Gage Certification Laboratory, December 9.

Eugene C. Williams, Facilities Engineering, December 9.

Driving Requires Many Split-Second Decisions

Driving requires that decisions be made almost constantly. Most traffic emergencies must be recognized and action taken in split seconds, according to the National Safety Council. Drive ahead—try to decide in advance what action is best at any place for each emergency that may arise. Try to drive in such a way that you have plenty of time to make the right decision. Don't crowd those split seconds by crowding the traffic—and your luck.

11 a.m. Tickets For Kids' Parties Are Already Exhausted–Try Other Time

Just like we said, some times are more popular than others. Already, the 11 a.m. tickets are gone for the December 21 Kids' Parties.

That leaves only the 9 a.m. . . . 1, 3 and 5 p.m. times.

Has your application been filled yet?

The Delmonte Chimps (a trained act of chimpanzes) will be there for all five parties to delight the kids . . . along with Santa, carol-singing and the usual array of colored cartoons.

Santa will leave favors for each of the children.

Kids and accompanying parents both need tickets, which are free. An application appears elsewhere in the Bulletin.

Make sure that application is filed today. You may use the plant mails . . . but the tickets will be mailed to your home.

ISA Meeting Set Tonight

The December meeting of the Oak Ridge section of the Instrument Society of America will be held tonight, Wednesday, December 6, at the Holiday Inn, Oak Ridge. The social hour begins at 6 p.m., with dinner at 6:45.

Dr. Curtis E. Miller, director of medical research, Beckman Instruments, Inc., will speak on "Multiphasic Screening and Predictive Medicine — Progress, Problems and Prospects." A critical review of multiphasic screening and predictive medicine in terms of present practicability and future potential will be presented. Some instrumentation requirements will be discussed.

Welding Society Meeting Next Tuesday In Knox

The Northeast Tennessee Section of the American Welding Society will host its annual Ladies' Night next Tuesday, December 12. The meeting will be held at the Deane Hill Country Club, Knoxville. Refreshments will be served at 6:30 p.m. and the filet mignon dinner will be at 7:15 p.m.

The after-dinner speaker will be James Myers Jr., Tennessee Eastman Company. His humorous talk, "Welding — Past, Present and Future" is oriented for the benefit of the ladies.

All persons interested in the field of welding and brazing are urged to attend with their favorite lady. The tab for the evening is $6 per couple for AWS members and $8 per couple for non-members.

Reservations may be made through C. R. Eichelberger, extension 3-5851.

Katy Kutkost SEZ:

We started gathering up green sheets for this period July 1. Here's the box score as of December 1.

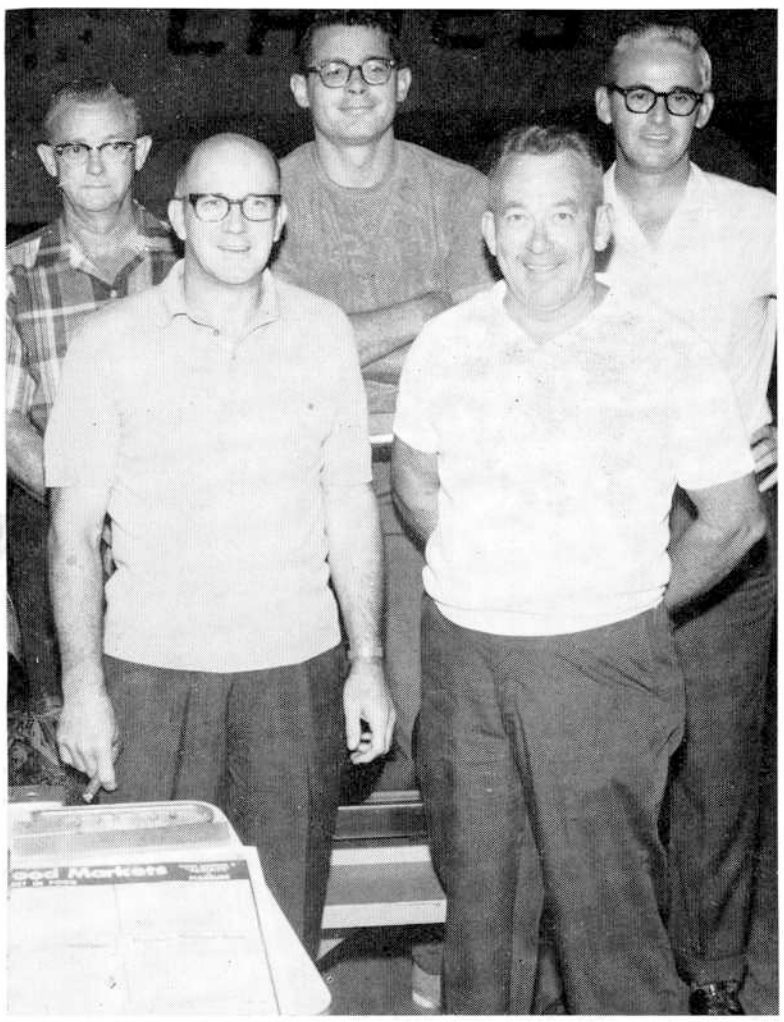
Division	Received	Goal
Accounting and Budget	0	5
Assembly	0	25
Development	3	115
Engineering	5	155
Fabrication	45	115
Industrial Relations	4	15
Maintenance	151	250
Materials and Services	3	35
Metal Preparation	2	50
Production Planning and Scheduling	0	30
PSS and Utilities	2	15
Technical	15	150

The Maintenance Division seems to be in danger of reaching their goal. The rest of the divisions will have to initiate a crash program to achieve the plant goal of more than 720 green sheets.

Deadline: December 31.

MONSTER MUG

Sign over a restaurant specializing in hot dogs and suds: "Frank 'N Stein."



THE SPLINTERS CONSTITUTE another big threat for on-comers in the Classic Bowling League. They are, front row from left, Elmer Johnson and Frank Thurman; back row, R. G. Marlar, George Reece and M. C. Bays.

Rebels, All Stars Tied In Classic

The Rebels moved up into a tie with the All Stars in the Classic Bowling League last week, as they trounced the Smelters for four points. The Eagles took the All Stars for four. Also winning the full count were the Playboys over the Rippers, the Eightballs over the Screwballs, and the Tigers past the Splinters.

The Has Beens took three from the Markers, and the Bumpers bested the Swingsters for three. The Pinbusters and Cubs shared two.

Rudy Pletz, Has Beens, excelled in singles with fine scores of 257 scratch, 272 handicap. His 641 series in scratch count was high also. John Kimsey, Eagles, rolled a 687 handicap series.

The Has Beens took team highs all the way . . . single of 904 scratch, 1019 handicap; series of 2611, 2956.

League standings follow:

Team	W	L
All Stars	33	15
Rebels	33	15
Has Beens	31	17
Swingsters	30	18
Bumpers	29½	18½
Playboys	26	22
Eightballs	26	22
Markers	24½	23½
Splinters	23	25
Tigers	23	25
Smelters	21	27
Eagles	21	27
Pinbusters	19½	28½
Cubs	18½	29½
Rippers	17	31
Screwballs	8	40

"It says, 'I didn't have time to make your lunch... consult your Yellow Pages for a good place to eat.'"

Recreation calendar

Sunday, December 10

SKEET TOURNAMENT: 1 p.m., Oak Ridge Sportsman's Association Range.

Monday, December 11

BOWLING: C League, 5:45 p.m., Ark Lanes.

TABLE TENNIS: 7 p.m. Oak Ridge Wildcat's Den.

PHYSICAL FITNESS: (For Women) 7:30 p.m., Oak Ridge High School Girls' Gym.

BASKETBALL: Beginning 6:30 p.m., Oak Ridge High School Gym. Health Physics vs. Sharp Shots; Eagles vs. Combustion; Atoms vs. Bombers.

Tuesday, December 12

PHYSICAL FITNESS: 7:30 p.m., Oak Ridge High School Gym.

CARBIDE CAMERA CLUB: 8 p.m. First United Presbyterian Church.

Wednesday, December 13

TURKEY SHOOT: Oak Ridge Sportsman's Association, 6:30 p.m.

BOWLING: Mixed League, 8 p.m., Ark Lanes.

BASKETBALL: Beginning 6:30 p.m., Oak Ridge High School. Radioisotopes vs. TK's; Eagles vs. K-25 Falcons; Charges vs. Bat Boys.

Thursday, December 14

BOWLING: Classic League, 5:45 p.m., Ark Lanes.

BADMINTON: Informal Play, Employees and Spouses, 7:30 p.m., Jefferson Junior High School Gym.

VOLLEYBALL: Beginning 6:30 p.m., Oak Ridge High School Gym. Court A: Neophytes vs. Dirty Half-Dozen; Beavers vs. Old Men; K-25 Hawks vs. Charley Browns. Court B: Mountaineers vs. Naughts; Set Ups vs. Mix Ups; Ecobums vs. K-25 Gashouse Gang.

Friday, December 15

DEADLINE: For applications for Christmas Parties for Kids.

The security spotlight is on you.

Goofers, McSprays Inch Up In Mixed

Two teams moved up in the Mixed Bowling League last week, as the Goofers gained three over the Rollers, and the McSprays took three away from the Hits & Misses. The Roses 'N Thorns and Mustangs shared two, while the Alley Cats twisted three away from the Twisters.

Lou Sahr, Twisters, took all female honors, with singles of 184 scratch, 223 handicap . . . series of 477 scratch, 594 handicap. Chris Mooney, Alley Cats, aced 180 scratch, 205 handicap singles . . . while Spence Ferguson, Twisters, zeroed in with series of 525 scratch, 642 handicap.

The Rollers rolled high single in scratch count with 598. The Alley Cats counted high in handicap scoring, singles of 755, series of 2239 . . . while the Twisters took high scratch series with 1748.

League standings follow: .

Team	W	L
Hits & Misses	29	19
Goofers	27	21
McSprays	27	21
Roses 'N Thorns	26	22
Rollers	25½	21½
Alley Cats	25	23
Mustangs	21	27
Twisters	11½	36½

Health Physics In Basketball Lead

Last week's Basketball action began in earnest as the TK's, from ORNL, kayoed the Y-12 Bat Boys 61 to 19.

Big gun for the TK's was Marvin Anderson with 16 points; Doug Raymer, 14; and Dick Hudson, 12.

Steve Wyatt scored high for the Boys with 10.

The second foray featured the Health Physics crowd defeating the K-25 Falcons 63 to 39.

Jim Treadwell treated the winners with 24 big points . . . while Churchill Moore tallied 18 for the losing squad.

Monday's final game saw the Combustion team outshoot the Sharp Shots 40 to 33.

Jim McCall collected 13 big points, Charles Kirkpatrick 11, Junior Hood 10, for the winners . . . Ed Bailiff fired 11 for the losers.

Wednesday's play started with the Health Physics team gaining win number three, this time at the expense of the Y-12 Eagles. The HP team looked in mid-season form. After a couple of minutes of warm-up play, they began to get down to business. A familiar face on the hardwood Jim Carter paced the winning team with 18 big points . . . Jim Treadwell scored 14. For the losers it was Larry McDonald, 13.

The ORNL Bombers defeated the Y-12 Chargers in game two 45 to 28. The game was fairly close until the closing quarter, when the Chargers ran out of steam. Jim Shoemaker and Ray Nabors led the stealing and scoring.

Ken Dirksen paced the losing team with 10 points.

Final action saw the Radioisotopes defeat the Y-12 Atoms 43 to 25. Both teams started cold, but the Isotopes warmed up, as Wagner and Strange began to uncoil.

Simley collected 14 points . . . and Williams, arriving late, paced the Atoms with 19 big points.

League standings follow:

Team	W	L
Health Physics, ORNL	3	0
Combustion, ORNL	1	0
Bombers, ORNL	1	0
Eagles, Y-12	1	1
Chargers, Y-12	1	1
Radioisotopes, ORNL	1	1
TK's, ORNL	1	1
Atoms, Y-12	0	1
K-25 Falcons, K-25	0	1
Bat Boys, Y-12	0	2
Sharp Shots, ORNL	0	2

THE KING PINS enjoy a 24 win, 24 loss record in the C Bowling League . . . fair score in any competition. They are, front row, Jim Miller and H. B. Presley . . . back row: Frank Stoetzel, Captain L. R. Edwards and Harold Rector.

Fireballs Still Hot On C Alleys

The Fireballs flamed through last week's bowling, liking their top position in C League standings. They downed the Rollmasters for the full count. The Big Five also ran through the Invalids for the full count.

Posting three it was the Rounders over the Parbusters, the Sunflowers past the Badgers, and the HiLifers over the King Pins. The Royal Flush and Rodders shared two.

Norm Jarvis, Big Five, posted high scores all the way . . . singles of 222 scratch, 236 handicap . . . series of 645 (a new high) scratch, and 687 handicap.

The Big Five were best in singles on scratch count with 893 . . . while the Sunflowers sailed through with a 1035 handicap single count. The Big Five were tops in series . . . 2586 scratch, 2931 handicap.

League standings follow:

Team	W	L
Fireballs	32	16
Rounders	29	19
Big Five	27	21
Sunflowers	27	21
Badgers	26	22
Rollmasters	24	24
King Pins	24	24
Royal Flush	24	24
Parbusters	20	28
Rodders	19	29
HiLifers	18	30
Invalids	18	30

4 Volleyball Teams Undefeated

Four teams are undefeated as the Volleyball League gets into serious play. Court A action began last week as the Y-12 Beavers downed the Naughts, ORNL, for four games . . . 15-5, 15-1, 15-2 and 15-7. The Ecobums edged past the Y-12 Mountaineers 15-4, 15-8, 15-8 and 15-3. The Old Men backed the Charley Browns down 15-7, 15-8, 15-9 and 15-5.

Over on Court B the Dirty Half-Dozen downed the K-25 Gashouse Gang 15-6, 15-9, 15-6 and 15-5. The Mix-Ups took two from the Neophytes 15-8, and 15-12 . . . while the Neophytes took games two and three 17-15, and 15-13.

The Set-Ups won three 15-5, 15-3, and 15-9 to lose 15-10 to the K-25 Hawks.

Team	W	L
Ecobums, ORNL	8	0
Old Men, ORNL	8	0
Beavers, Y-12	8	0
Dirty Half Dozen, ORNL	8	0
Naughts, ORNL	4	4
Mountaineers, Y-12	3	7
Set-Ups, ORNL	3	7
Neophytes, Y-12	2	6
K-25 Mix-Ups	2	6
Charley Browns, ORNL	1	7
K-25 Hawks	1	7
K-25 Gashouse Gang	0	8

Table Tennis Begins 2nd Half

Lloyd Wyatt, who won the first half of the X Table Tennis League, lost three matches last week to Geoffrey Newman. Roy Huddleston took three from Jerry Keyes, and Bill Motley downed Herb Mook for two.

X 2nd half standings:

Player	W	L
Roy Huddleston	3	0
Geoffrey Newman	3	0
Bill Motley	2	1
Herb Mook	1	2
Lloyd Wyatt	0	3
Jerry Keyes	0	3
Herve Derrien	0	0
Bill Foutz	0	0

Gordon Brewer captured honors in the first half of the Y League. He defeated Ed Gambill last week for two. Paul Kasten kayoed Francois Kertesz for the full count . . . and Bob Coveyou downed Al Norris for two.

Y 2nd half standings:

Paul Kasten	3	0
Bob Coveyou	2	1
Gordon Brewer	2	1
Al Norris	1	2
Ed Gambill	1	2
Francois Kertesz	0	3
Fred Wetzel	0	0
Bob Brown	0	0
Art Weinberger	0	0
Rokuro Oyamada	0	0

Bill Smith took the reins in the Z League's first half . . . and began the second half with a sweep over Jim Hallau. Bill Hacket defeated Tudor Boyd for the full count also.

Z 2nd half standings:

Bill Hackett	3	0
Bill Smith	3	0
Jim Hallau	0	3
Tudor Boyd	0	3
Joe Lewin	0	0
Windred Collins	0	0
A. B. Meservey	0	0
Dave Allen	0	0

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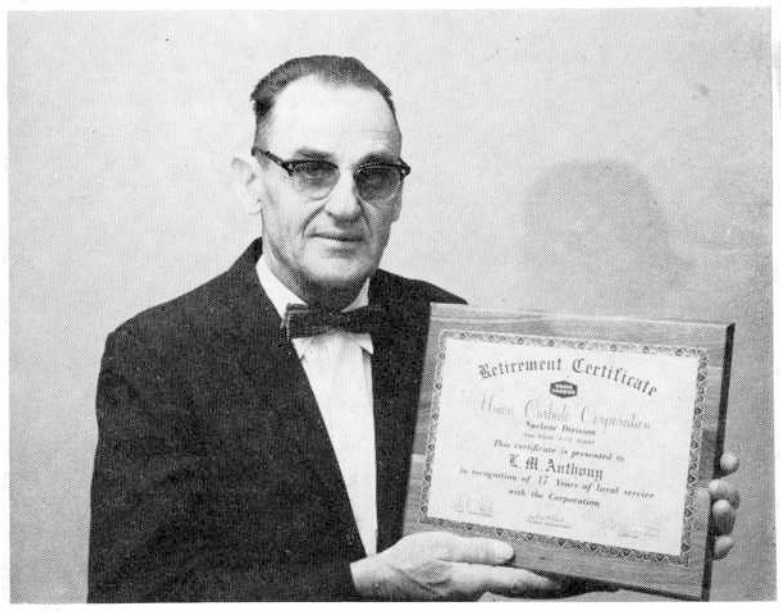
BUILDINGS, GROUNDS AND MAINTENANCE SHOPS personnel gathered last week to present a gift to Lamar M. Anthony, as the 17-year veteran retired November 30. Anthony lives in Lenoir City.



LAMAR M. ANTHONY, proudly shows his retirement certificate, saluting his 17 years of company service. Anthony retired last week from Y-12's Buildings, Grounds and Maintenance Shops.

Physics Division Seminar To Be Held By Obenshain

F. E. Obenshain, Physics Division, will conduct this week's seminar. His subject will be "Coulomb Recoil Implantation Mossbauer Experiments with Germanium-73."

The seminar is scheduled for Friday, December 8, at 3:15 p.m. in the East Auditorium of ORNL's 4500 building.

Poison Prevention Is Very Best Antidote

According to the Red Cross, the best first aid for poisoning is prevention. Safe storage and proper labeling of poisons are vital.

If poison is swallowed accidentally, act fast to dilute it by giving water or milk. Then, in most cases, induce vomiting. For alkalis and acids, do not cause vomiting.

When an antidote is mentioned on a container, follow the directions that are given. If no antidote is available, you may give the so-called "universal" antidote, which may be purchased commercially under several brand names at your local drug store. If the antidote is unknown, call your local poison control center or your doctor for instructions. Immediate professional medical attention is **always** recommended.

FOR MORE THAN 19 YEARS OF LOYAL SERVICE, Robert R. Duff is congratulated by V. B. Gritzner, right. Duff retired last week and above accepts his plaque and best wishes from the Arc Melting section.

'Oak Ridge Strategically Implanted In Another Important Phase'–Sapirie

Continued from Page 1

Most of these plants that have been accounted in 1966 and 1967 will come on stream at the end of this decade or in the early 1970's. At that time the upsurge in nuclear power business will become evident through increased production rates at the three gaseous diffusion plants.

Current shipments of enriched uranium for nuclear power plants, while at record levels, only represent the starting point in a rising demand curve. Last year a record $131 million worth of enriched uranium was shipped from AEC plants. This year's total through October has already reached $122 million.

Fuel Orders To Jump

Once construction is under way on the power reactors announced in the past few years, orders of enriched uranium to fuel them will increase demand dramatically.

The gaseous diffusion plants are now operating well below their potential and will continue to do so for the next few years. By January, 1969, the power consumption at the three plants will have been reduced to 2,000 megawatts as compared to 6,000 megawatt peak of the late 1950's. After 1969, however, consumption will increase rapidly — reaching full loading in the late 1970's.

"These plants are highly automated and require tremendous amounts of electrical power," Sapirie said. The current power consumption for the three is approximately 25 billion kilowatt hours per year, which amounts to an annual bill of approximately $112 million.

Future Plans Made

According to Sapirie the Commission is already looking toward meeting the future needs for enriched uranium. "It is essential that we plan and project five to six years from now because we must contract now for our enormous power needs," he stated.

"Additional gaseous diffusion capability — whether new plants or additions to old ones—will undoubtedly have to be provided to meet future needs."

As atomic energy and Oak Ridge Operations turn their first quarter century, the glamour of nuclear power has attracted the spotlight. Other areas of atomic energy, however, have not been neglected. Radioistopes, one of the earliest peaceful applications of nuclear energy, continue to be an important part of the work at the AEC's Oak Ridge National Laboratory. At the same time the Commission has encouraged the private production of radioisotopes, and has withdrawn from production of a number of isotopes now successfully produced by industry.

"To encourage such participation," Sapirie says, "The Commission has an Isotope Information Center at the Oak Ridge National Laboratory to collect, evaluate, and disseminate world-wide information on production and uses of radioisotopes in industry and research."

At Oak Ridge scientists are constantly pursuing other paths: from the production of pure viruses for vaccines with advanced liquid centrifuge systems, through work on thermonuclear fusion to produce energy much as the sun does, to the development of radiation treatment for cancer diseases, and to the conceptual development of a type of agro-industrial complex to provide electricity, water and valuable metals and minerals in arid seacoast regions. Oak Ridge is already committed to its second quarter century.

BEST FRIENDS

Man's teeth and hair are said to be his best friends. But even the best of friends fall out.

Application For Tickets
TO
Christmas Parties

FOR CHILDREN OF CARBIDE EMPLOYEES
(Ages Two-10 Only)

THURSDAY, DECEMBER 21

Employee's Name_____ Badge No._____

Home Address_____
(PLEASE PRINT — STREET ADDRESS OR R.F.D., CITY, AND ZIP CODE)

NUMBER OF TICKETS (Children)_____

NUMBER OF TICKETS (Adult) _____

— CHECK TIME PREFERRED —

Thursday, December 21 9 A.M._____

Only 1 P.M._____ 3 P.M._____ 5 P.M._____

Please check first, second and third choice (write in space "1", "2" or "3") as only a limited number of tickets will be issued for each party. Preference will be given early applicants and if tickets for first choice are exhausted, tickets for second choice will be issued.

Return this form, properly and completely filled in, **immediately to the Y-12 Recreation Office, Room 156, Bldg. 9704-2, NOT LATER** than **December 15.** The required number of tickets will then be mailed to parents at their **HOME ADDRESS**